



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
09/475,190	12/30/1999	KRISTIAN MATS LINDSKOG	040020-167	6051
27045	7590	10/25/2005	EXAMINER	
ERICSSON INC. 6300 LEGACY DRIVE M/S EVR C11 PLANO, TX 75024			BURD, KEVIN MICHAEL	
			ART UNIT	PAPER NUMBER
			2631	

DATE MAILED: 10/25/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary	Application No. 09/475,190	Applicant(s) LINDSKOG ET AL.	
	Examiner Kevin M. Burd	Art Unit 2631	

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 19 August 2005.
- 2a) ☒ This action is **FINAL**. 2b) ☐ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-9, 11-20 and 22-52 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-9, 11-20, 22-52 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on _____ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some * c) ☐ None of:
1. ☐ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

* See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- | | |
|--|---|
| 1) <input type="checkbox"/> Notice of References Cited (PTO-892) | 4) <input type="checkbox"/> Interview Summary (PTO-413)
Paper No(s)/Mail Date. _____ |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948) | 5) <input type="checkbox"/> Notice of Informal Patent Application (PTO-152) |
| 3) <input type="checkbox"/> Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date _____ | 6) <input type="checkbox"/> Other: _____ |

Art Unit: 2631

1. This office action, in response to the amendment filed 8/19/2005, is a final office action.

Response to Arguments

2. Applicant's arguments filed 8/19/2005 have been fully considered but they are not persuasive. Soliman discloses the estimated round trip delay is the recorded round trip delay and this value is transmitted back to the base station (column 14, lines 31-33). In addition, Soliman discloses the error in the receiver clock is indicated to the transmitter node (column 10, lines 58-62) and must be corrected. This is the uncertainty factor/value. For these reasons and the reasons stated in the previous office action, this office action is made final.

Claim Rejections - 35 USC § 103

The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which said subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

3. Claims 1-4, 6-9, 12-19, 37-41, 43, 44 and 46-52 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larson (US 4,569,042) in view of Soliman (US 6,433,739).

Regarding claims 1, 4, 6, 7, 18, 19, 37, 43, 50 and 51, Larson discloses a network including a first and second node as shown in figure 1. A first node 100

transmits packets to a second node. The packets include a time of transmission or time stamp (column 3, lines 3-5). The second node 101 transmits a signal to the first node 100 comprising a reply time stamp (the time of transmission of the reply) and the time stamp of the first transmission (column 9, lines 49-60). The difference between these two time stamps will represent an estimate of the transmission time between the two nodes. The first node 100 uses a difference calculator 204 to calculate the asynchrony, or difference, between the clocks at each node (column 10, lines 54-55) using the time stamps from each node (column 10, line 43 to column 11, line 17). Larson does not expressly disclose transmitting an estimation of a time interval. However, transmission of an estimated time interval is well known in the art of communication. Soliman discloses a wireless device (second node) transmitting the recorded round trip delay back to the base station (first node) (column 14, lines 31-34). It would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the teachings of Soliman in the communication system of Larson. By transmitting the time interval instead of the start and end times of a time interval, the length of the data transmission can be reduced thereby reducing the complexity of the transmission.

Regarding claims 2, 12, 38, 39, 41, 44, 46 and 52, the asynchrony could be used by the logic and control unit 202 to synchronize clock 200 of node 100 with the clock of node 101 (column 11, lines 21-24).

Regarding claim 3, as stated above, Soliman discloses transmitting the round trip delay.

Regarding claims 8 and 9, over time each sender will transmit a plurality of time stamps and each receiver will receive a plurality of time stamps.

Regarding claims 13-15, more than one sender and one receiver will be present in the system. These additional elements are also in communication with the element of the system.

Regarding claims 16, 17, 48 and 49, any packet transmission system is capable of utilizing this system.

Regarding claims 40 and 47, if the packet is not received within a predetermined time period, a timeout occurs (column 9, line 67 to column 10, line 1).

4. Claims 5, 11, 20, 22-36, 42 and 45 are rejected under 35 U.S.C. 103(a) as being unpatentable over Larson (US 4,569,042) in view of Soliman (US 6,433,739) further in view of Greer et al (US 5,697,082).

Regarding claims 5, 11, 42 and 45, the combination of Larson and Soliman discloses the method stated above in paragraph 3. The combination does not disclose using a Kalaman observer for calculating the asynchrony, or difference between the clocks of node 100 and node 101. Greer discloses the use of a Kalaman filter to calibrate an oscillator. The Kalaman filter allows the proper correction of the oscillator to be conducted to correct for errors due to aging of the terminal oscillator (column 2, lines 46-63). Therefore it would have been obvious for one of ordinary skill in the art at the time of the invention to use the Kalaman filter of Greer in the system and method of the combination of Larson and Soliman to allow the difference in the clocks to be

compensated for properly so the oscillators are synchronized. This allows data to be transferred correctly.

Regarding claims 20, 22, 23, 29, 30, 32, 35 and 36, Larson discloses a network including a first and second node as shown in figure 1. A first node 100 transmits packets to a second node. The packets include a time of transmission or time stamp (column 3, lines 3-5). The second node 101 transmits a signal to the first node 100 comprising a reply time stamp (the time of transmission of the reply) and the time stamp of the first transmission (column 9, lines 49-60). The difference between these two time stamps will represent an estimate of the transmission time between the two nodes. The first node 100 uses a difference calculator 204 to calculate the asynchrony, or difference, between the clocks at each node (column 10, lines 54-55) using the time stamps from each node (column 10, line 43 to column 11, line 17). Larson does not expressly disclose transmitting an estimation of a time interval. However, transmission of an estimated time interval is well known in the art of communication. Soliman discloses a wireless device (second node) transmitting the recorded round trip delay back to the base station (first node) (column 14, lines 31-34). It would have been obvious for one of ordinary skill in the art at the time of the invention to utilize the teachings of Soliman in the communication system of Larson. By transmitting the time interval instead of the start and end times of a time interval, the length of the data transmission can be reduced thereby reducing the complexity of the transmission.

The combination of Larson and Soliman does not disclose using a Kalman observer for calculating the asynchrony, or difference between the clocks of node 100

and node 101. Greer discloses the use of a Kalaman filter to calibrate an oscillator. The Kalaman filter allows the proper correction of the oscillator to be conducted to correct for errors due to aging of the terminal oscillator (column 2, lines 46-63). Therefore it would have been obvious for one of ordinary skill in the art at the time of the invention to use the Kalaman filter of Greer in the system and method of the combination of Larson and Soliman to allow the difference in the clocks to be compensated for properly so the oscillators are synchronized. This allows data to be transferred correctly.

Regarding claims 24, 27, 28, 33 and 34, any packet transmission system is capable of utilizing this system.

Regarding claims 25, 26 and 31, more than one sender and one receiver will be present in the system. These additional elements are also in communication with the element of the system.

Conclusion

THIS ACTION IS MADE FINAL. Applicant is reminded of the extension of time policy as set forth in 37 CFR 1.136(a).

A shortened statutory period for reply to this final action is set to expire THREE MONTHS from the mailing date of this action. In the event a first reply is filed within TWO MONTHS of the mailing date of this final action and the advisory action is not mailed until after the end of the THREE-MONTH shortened statutory period, then the shortened statutory period will expire on the date the advisory action is mailed, and any extension fee pursuant to 37 CFR 1.136(a) will be calculated from the mailing date of

Art Unit: 2631


the advisory action. In no event, however, will the statutory period for reply expire later than SIX MONTHS from the mailing date of this final action.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Kevin M. Burd whose telephone number is (571) 272-3008. The examiner can normally be reached on Monday - Friday 9 am - 5 pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Mohammad Ghayour can be reached on (571) 272-3021. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free).

Kevin M. Burd
10/23/2005


KEVIN BURD
PRIMARY EXAMINER